
A Stem Cell Library to Predict Which Drugs Are Heart Safe, and an Injectable Treatment for Clogged Arteries

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Oakland, CA – Innovative approaches to help people with clogged arteries and to identify new therapies that may be toxic to the heart were today approved by the governing Board of the California Institute for Regenerative Medicine (CIRM).

The awards are part of CIRM's Translational Research Program.

"Taking a promising therapy and moving it out of the lab and into clinical trials takes a lot of expertise and money," says C. Randal Mills, Ph.D., President & CEO of CIRM. "Our Translational program provides both, giving scientists the support they need to complete the research and get approval to start a clinical trial where we see if this work can really help people in need."

Researchers at the University of California, San Diego (UCSD), led by Karen Christman, Ph.D., were awarded almost \$3.1 million. They are working on a new method for helping people with peripheral artery disease (PAD). This is a condition that narrows and blocks arteries in the legs, stomach, arms and head, causing cramping, pain and fatigue. It affects an estimated eight million Americans and puts them at an increased risk of heart disease, heart attack and stroke.

The team at UCSD has developed a hydrogel that can be injected into the muscles in the leg, creating a kind of cellular scaffold that can both improve blood flow and help stimulate muscle regeneration. They hope this will result in improved walking capacity and higher quality of life for patients.

The CIRM Board awarded \$1 million to a team at Stanford, led by Joseph Wu, M.D., Ph.D., to develop a new approach to testing drugs to ensure they are not toxic to the heart. Current models to test these drugs are far from perfect and can lead to approval of medications that might endanger people with heart disease. They can also produce inaccurate results, leading to some potentially promising medications being withdrawn from testing.

The Stanford team hopes to get around this by creating a library of heart cells, called cardiomyocytes, that have been created from induced pluripotent stem cells (iPSCs). These are cells that have been created from an adult cell, such as skin or blood, and reprogrammed so they can now be turned into any other cell in the body. This library will include iPSC-derived cardiomyocytes from 40 individuals, some of whom are healthy, and others who have a variety of different heart conditions. The cells can be used to screen different medications and determine if they are toxic and also compare toxicity levels for cells from the healthy individuals and those with a heart condition.

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About CIRM

At CIRM, we never forget that we were created by the people of California to accelerate stem cell treatments to patients with unmet medical needs, and act with a sense of urgency to succeed in that mission.

To meet this challenge, our team of highly trained and experienced professionals actively partners with both academia and industry in a hands-on, entrepreneurial environment to fast track the development of today's most promising stem cell technologies.

With \$3 billion in funding and approximately 300 active stem cell programs in our portfolio, CIRM is the world's largest institution dedicated to helping people by bringing the future of cellular medicine closer to reality.

For more information, go to www.cirm.ca.gov

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